

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

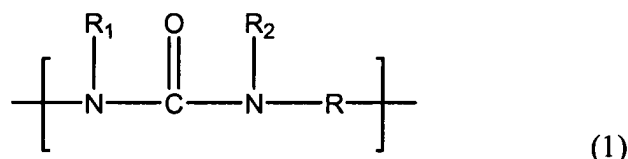
LISTING OF CLAIMS:

1. (currently amended): A resin composition for semiconductor encapsulation comprising the following components (A) to (D) and having a viscosity of 7,000 poise or more at 25°C and 5,000 poise or less at 80°C:

(A) an epoxy resin;

(B) a phenolic resin;

(C) a latent curing accelerator, wherein the latent curing accelerator is a micro-capsule curing accelerator having a core-shell structure comprising a core portion made of the curing accelerator encapsulated with a shell portion mainly composed of a polymer having a structural unit represented by the following general formula (1)



wherein R represents a divalent or trivalent organic group, and R₁ and R₂, which may be the same or different, each represents a hydrogen atom or a monovalent organic group; and

(D) an inorganic filler.

2. (original): The resin composition for semiconductor encapsulation according to Claim 1, wherein said component (A) is a liquid epoxy resin and said component (B) is a solid phenolic resin.

3. (original): The resin composition for semiconductor encapsulation according to Claim 1, wherein said component (A) is a solid epoxy resin and said component (B) is a liquid phenolic resin.

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4. (original): The resin composition for semiconductor encapsulation according to Claim 1, wherein said component (A) is a solid epoxy resin and said component (B) is a solid phenolic resin.

5. (canceled).

6. (original): The resin composition for semiconductor encapsulation according to Claim 1, wherein said inorganic filler as the component (D) is spherical fused silica powder and said spherical fused silica powder is incorporated in the resin composition for semiconductor encapsulation in a proportion of from 15 to 85% by weight based on the total amount of the resin composition for semiconductor encapsulation.

7. (withdrawn): A semiconductor device comprising a semiconductor element provided on a wiring circuit board with a plurality of connecting electrode portions interposed therebetween, the gap between said wiring circuit board and said semiconductor element being sealed with an encapsulating resin layer, wherein said encapsulating resin layer is formed by a resin composition for semiconductor encapsulation according to Claim 1.

8. (withdrawn): A process for the production of a semiconductor device comprising a semiconductor element provided on a wiring circuit board with a plurality of connecting electrode portions interposed therebetween, the gap between said wiring circuit board and said semiconductor element being sealed with an encapsulating resin layer, which comprises filling the gap between said wiring circuit board and said semiconductor element with a resin composition for semiconductor encapsulation according to Claim 1, and then curing the resin composition to form said encapsulating resin layer.

9. (withdrawn): A semiconductor device comprising a semiconductor element provided on a wiring circuit board, said wiring circuit board and said semiconductor element being electrically connected to each other, said semiconductor element being encapsulated by an encapsulating resin layer in such an arrangement that said semiconductor element is incorporated therein, wherein said encapsulating resin layer is formed by a resin composition for semiconductor encapsulation according to Claim 1.

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10. (withdrawn): A process for the production of a semiconductor device comprising a semiconductor element provided on a wiring circuit board, said wiring circuit board and said semiconductor element being electrically connected to each other, said semiconductor element being encapsulated by an encapsulating resin layer in such an arrangement that said semiconductor element is incorporated therein, which comprises placing a semiconductor element on said wiring circuit board, electrically connecting said wiring circuit board and said semiconductor element to each other, supplying a resin composition for semiconductor encapsulation according to Claim 1 onto the semiconductor element side of said wiring circuit board, and then curing said resin composition for semiconductor encapsulation to form said encapsulating resin layer.

11. (withdrawn): A semiconductor product comprising a semiconductor device having a resin encapsulation layer formed with a plurality of connecting electrode portions interposed therebetween, said semiconductor device being provided on a mounting board with the wiring circuit board of the semiconductor device being opposed to said mounting board, and the gap between said mounting board and said semiconductor device being sealed with an encapsulating resin layer, wherein said encapsulating resin layer is formed by a resin composition for semiconductor encapsulation according to Claim 1.

12. (withdrawn): A process for the production of a semiconductor device, which comprises a step of forming a resin layer made of a resin composition for semiconductor encapsulation according to Claim 1 on the protruding electrode portion side of a semiconductor wafer having a plurality of semiconductor elements having protruding electrode portions formed thereon to a predetermined thickness in such an arrangement that at least the forward ends of said protruding electrode portions are exposed to the exterior of said resin layer, and a step of cutting said semiconductor wafer having a resin layer formed thereon to individual semiconductor elements.

13. (withdrawn): The process for the production of a semiconductor device according to Claim 12, wherein said step of forming a resin layer is carried out by printing through an opening in a mask.

14. (withdrawn): A process for the production of a semiconductor device, which comprises a step of supplying a resin composition for semiconductor encapsulation according to Claim 1 onto the whole of a plurality of semiconductor elements provided on a matrix wiring circuit board having individual circuits formed thereon to form a resin layer with said semiconductor elements being incorporated therein, and a step of cutting said matrix wiring circuit board having a resin layer formed thereon with said semiconductor elements being incorporated therein together with said resin layer to every semiconductor element.

15. (withdrawn): The process for the production of a semiconductor device according to Claim 14, wherein said step of forming a resin layer is carried out by printing through an opening in a mask.

16. (withdrawn): A process for the production of a semiconductor device, which comprises a step of forming a resin layer made of a resin composition for semiconductor encapsulation according to Claim 1 on the protruding electrode portion side of a semiconductor wafer having a plurality of semiconductor elements having protruding electrode portions formed thereon to a predetermined thickness, a step of cutting said semiconductor wafer having a resin layer formed thereon to individual semiconductor elements, and a step of contact-bonding a wiring circuit board and said semiconductor element thus cut under heating with the resin layer side of said semiconductor element and said wiring circuit board being opposed to each other such that the two components are electrically connected to each other and said resin layer is melted and cured to form an encapsulating resin layer between said semiconductor element and said wiring circuit board, thereby encapsulating said semiconductor element.

17. (withdrawn): The process for the production of a semiconductor device according to Claim 16, wherein said step of forming a resin layer made of said resin composition for semiconductor encapsulation is carried out by printing through an opening in a mask.

18. (withdrawn): The process for the production of a semiconductor device according to Claim 16, wherein said step of forming a resin layer made of said resin composition for semiconductor encapsulation is carried out by means of a dispenser.

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19. (withdrawn): A process for the production of a semiconductor device, which comprises a step of applying a resin composition for semiconductor encapsulation according to Claim 1 to a matrix wiring circuit board having individual circuits formed thereon to form a resin layer thereon, a step of cutting said wiring circuit board having a resin layer formed thereon to individual wiring circuit boards, and a step of contact-bonding semiconductor elements each having a plurality of connecting electrode portions provided thereon and said wiring circuit boards thus cut under heating with the connecting electrode portion side of said semiconductor elements and said wiring circuit boards being opposed to each other such that the two components are electrically connected to each other and said resin layer is melted and cured to form an encapsulating resin layer between said semiconductor elements and said wiring circuit boards, thereby encapsulating said semiconductor element.

20. (withdrawn): The process for the production of a semiconductor device according to Claim 19, wherein said step of applying a resin composition for semiconductor encapsulation to form a resin layer is carried out by printing through an opening in a mask.

21. (withdrawn): The process for the production of a semiconductor device according to Claim 19, wherein said step of applying a resin composition for semiconductor encapsulation to form a resin layer is carried out by means of a dispenser.

22. (currently amended): The resin composition for semiconductor encapsulation according to Claim 1, wherein said ~~latent curing accelerator as the component (C) is a micro-capsule type curing accelerator having a core-shell structure comprising a core portion made of the curing accelerator encapsulated with a shell portion mainly composed of a polymer~~ having a structural unit represented by formula (1) is obtained by the reaction of a polyisocyanate with a polyvalent amine.